

SINGAPORE

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SEMICONDUCTOR VOICE

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BUILDING A

SUSTAINABLE

TALENT PIPELINE

**ELECTRONICS
INDUSTRY DAY
2019**

**CREATING AN
EMPLOYEE-DRIVEN
LEARNING CULTURE**

**SMEs PLAY A
CRUCIAL ROLE IN
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**SEMICONDUCTOR
TRADEWINDS
SEP & OCT 2019**



SSIA

Singapore Semiconductor Industry Association

EQUIPPING AND PREPARING A NEW WORKFORCE FOR THE FUTURE OF WORK – THE SUTD STORY

Introduction

Digital disruptions and Industry 4.0 call for a new educational model that will equip students with the skillsets and training needed to thrive in a complex environment. In 2009, the Singapore Government set up the Singapore University of Technology and Design (SUTD) with the mission of advancing knowledge and nurturing technically grounded leaders who will solve complex vital societal needs through technology and design. In order to enable this vision, the University needed to be helmed with top tier talents globally and locally who possess the competencies and

talent to fulfill this vision and mission. The key to success lies in a coherent human resources and organizational development strategy that is needed to help recruit, reward, retain, as well as develop core talents.

As early as 2010, SUTD began an international strategy to source for global talents in different fields of expertise to helm its faculty. As a result, we now have a strong bench strength of 160 faculty from 30 different countries, working in different fields of specialization in 4 of our pillars and 2 of our clusters. SUTD adopts a pillar structure that cuts across disciplines

of Engineering Product Development, Engineering Systems and Design, Information Systems Technology and Design, as well as Architecture and Sustainable Design. Supporting the pillars are the Clusters of Science and Mathematics as well as Humanities, Arts and Social Sciences. This new type of pedagogy enables our students to work across disciplines, thus harnessing multi-disciplinary skills needed to solve complex problems and for developing new innovations. Table 1 below outlines the vision and design of SUTD contrasted with those of traditional universities.

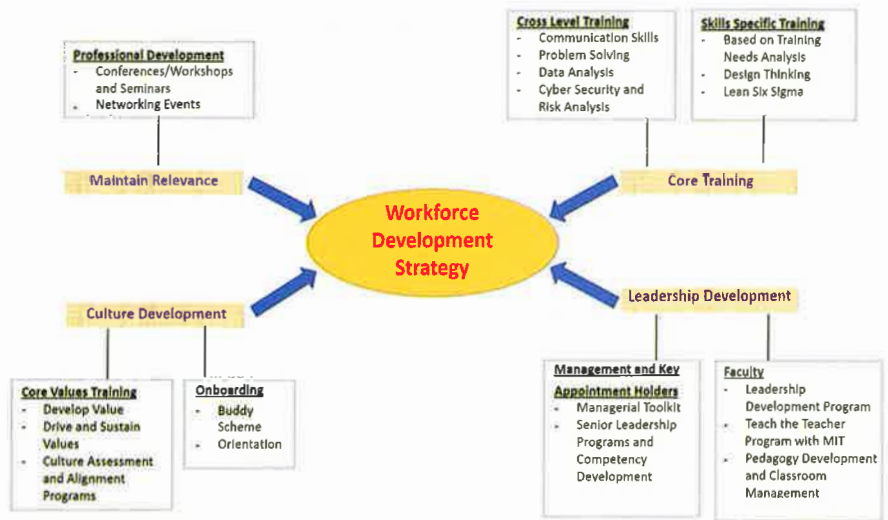
Table 1. The Vision and Design of SUTD Contrasted with Those of Traditional Universities

	TRADITIONAL UNIVERSITY	VISION FOR SUTD
Organizational Structure	Hierarchical and Territorial	Flat and agile with no schools, but instead pillars of specialization form the main core of the university.
Operating Model	Decentralization	Shared Services
Student Interaction	Big Lecture Series to achieve economies of scale	Small cohort size classrooms – to achieve intimacy of interaction.
Student Learning	Theoretical	A strong theoretical foundation coupled with a hands-on interactive experience that is interlaced with internships and practice.
Research	Narrowly Focused	Multi-disciplinary, focus on innovation and creativity (development and improvement of artifacts) rather than only description or explanation.
Faculty Recruitment	Decentralized with a narrow focus	Decentralization at the first level of screening, but centralization when it comes to decision to hire. The President chairs the final selection committee together with a multi-disciplinary team to ensure that each faculty hired has the potential to collaborate across the different specializations.
Faculty Governance	Dominant in faculty self-governance	Mixed faculty governance with specifically chartered work teams on key projects that may also include administrative staff.

Workforce Development Strategy for Phase 1

In setting an organization that is non-traditional, this needs a purposeful effort to build the culture and to develop the workforce so as to achieve alignment. SUTD's President worked very closely with the HR and leadership team in collaboration with all employees, faculty and students to develop the needed culture and values. This effort, in combination with the Learning and Development Strategy, was deployed for the last 9 years through various programs and strategic activities as illustrated in Diagram 1. Phase 1 resulted in many achievements and success for SUTD.

Diagram 1



Capability Development Strategy for Phase 2

In Phase two of our development, the President together with the Board, and Senior Leadership Team, identified core research areas that will help propel SUTD. This was specifically in the areas of Aviation, Healthcare and Cities, supported by horizontals of Artificial Intelligence, Data Science and Design. Phase 2 of the Capability Development strategy for faculty, research and administrative staff began to kick in. This included an international acquisition plan for new faculty talents in the growth areas, a development plan to groom current faculty, administrative and research talents, as well as a leadership and competency framework. The overall Capability Strategy is illustrated in Diagram 2.

Diagram 2

SUMMARY: OVERALL CAPABILITY STRATEGY

Core Competency Development

- Workforce Planning for Optimization and Right Skilling
- Industry Focused Capabilities
- Building AI Capabilities
- Enhancing Faculty Capabilities
- Enhancing Researcher Capabilities
- Research Career Framework
- Strategic Hiring of Key Faculty & Researchers
- Multi-disciplinary Teams to Harness & Build Capabilities

Talent Pipeline

Talent Planning for Faculty

- Faculty Early Career Award Scheme
- Strategic Hiring
- Partnerships with A*STAR for PhD Talents

Enhancing Talent Brand through Strategic HR Activities

SUTD - Singapore's Smart Nation Campaign

- Los Angeles
- Edinburgh & Glasgow
- London
- Melbourne & Sydney
- Cambridge & Oxford
- San Francisco

Leadership Development and Succession

- Development of Core Competencies
- Succession Planning
- Hi-potential Development

We will share in a bit more detail the following components of the Capability Strategy:

1. Leadership Development and Competency Development

The HR team together with the assistance of a professional consulting firm worked with the leadership team to identify the critical success factors for performance of leaders. The framework

also links and builds upon the broader university strategic direction. The six competencies include:

- Thinking Strategically
- Driving Impact
- Collaborating & Influencing
- Innovating

- Leading People
- Managing Stakeholders

The new framework is now applied in the following areas as illustrated in Diagram 3.

Diagram 3

Leadership Competency Framework



2. Workforce Planning and Capability Development

Strategic Workforce Planning and Analysis is aimed at optimizing and effectively deploying our administrative resources to meet growing needs. This include:

- a. Establishing a clear understanding of the current workforce capacity and capabilities, and the future workforce requirements based on SUTD's 2023 growth plan; and
- b. Providing analysis and recommendations based on the desired outcomes, including the structure and competencies.

This 6-month long project involved every department and pillar. We conducted a detailed analysis of the roles and responsibilities of each job, looked at skills gaps and identified redundant processes that could be eliminated or automated. After the completion of the project, the following three streams were established.

- **Business Process Reengineering**
Every department/pillar to review

their own processes and systems and to set goals and targets for process improvements. This should result in better service standards internally and externally.

- **Process Automation**
While departments/pillars review their business processes and procedures, they will also identify areas for possible system automation. This includes leveraging on new technologies such as RPA to digitally transform SUTD's work processes.
- **Establishment of an Analytics Charter**
In order to enable our employees to look at processes using data tools, SUTD has started organizing Data Science and Analytics workshops for all employees to help them to acquire the basics to derive insights through data.

Conclusion

Workforce Planning and Capability Development is a critical component of reshoring and identifying critical skills gaps for the future of work. It allows organizations to take a strategic view

of things and employ strategies to:

- Attract a skilled workforce for current and future capabilities.
- Retain valued employees to help propel growth.
- Build capacity in the long run.
- Provide strategic leadership necessary to model the right behaviours.
- Develop an efficient and flexible workforce to cope with constant change.

The first phase of our Workforce Development Strategy helped SUTD claim its position as the fifth most influential scientific research institution in telecommunications, achieved a high overall employment rate of 94% for its students, and enabled our faculty to produce strong research and publications, to name a few. SUTD is now poised for its next phase of growth as we pro-actively plan and put in place our Workforce and Capability Strategy for Phase 2.

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